What is claimed:

1. A nucleic acid which encodes a soluble polypeptide which comprises an extracellular domain of a gonadotropin receptor and thioredoxin, wherein the soluble polypeptide is capable of binding to the gonadotropin.

2. A nucleic acid which encodes a soluble polypeptide which comprises an extracellular domain of a gonadotropin receptor and a peptide segment comprising consecutive histidine residues, wherein the soluble polypeptide is capable of binding to the gonadotropin.

3. The nucleic acid of claim 1, wherein the polypeptide further comprises a peptide segment comprising consecutive histidine residues.

4. The nucleic acid of any one of claims 1-3, wherein the gonadotropin receptor is a human luteinizing hormone/choriogonadotropin receptor and the soluble polypeptide is capable of binding to human luteinizing hormone or human chorionic gonadotropin.

5. The nucleic acid of claim 4, wherein the extracellular domain of human luteinizing hormone/choriogonadotropin receptor comprises consecutive amino acids having the sequence set forth in SEQ ID NO:2 from the R at position 168 to the G at position 509.

6. The nucleic acid of claim 4, wherein the thioredoxin comprises consecutive amino acids having the sequence set forth in SEQ ID NO:2 from the M at

position 1 to the A at position 109.

7. The nucleic acid of any one of claims 1-3, wherein gonadotropin receptor is a human follicle stimulating hormone receptor and the soluble polypeptide is capable of binding to human follicle stimulating hormone.

8. The nucleic acid of claim 7, wherein the extracellular domain comprises consecutive amino acids having the sequence set forth in SEQ ID NO:4 from the R at position 168 to the G at position 501.

9. The nucleic acid of claim 7, wherein the thioredoxin comprises consecutive amino acids having the sequence set forth in SEQ ID NO:4 from the M at position 1 to the A at position 109.

10. The nucleic acid of claim 2 or 3, wherein the peptide segment comprising consecutive histidine residues comprises at least 4 consecutive histidine residues.

11. The nucleic acid of claim 10, wherein the peptide segment comprising consecutive histidine residues comprises at least 6 consecutive histidine residues.

12. The nucleic acid of claim 11, wherein the peptide segment comprising consecutive histidine residues comprises at least 8 consecutive histidine residues.

13. The nucleic acid of any one of claims 1-3, wherein the nucleic acid is DNA.

14. The nucleic acid of claim 13, wherein the DNA is

cDNA.

15. The nucleic acid of any one of claims 1-3, wherein the nucleic acid is RNA.

16. A replicable vector which comprises the nucleic acid of any one of claims 1-3.

17. The vector of claim 16, wherein the vector is a plasmid, cosmid, λ phage or YAC.

18. A host cell which comprises the vector of claim 16.

19. The cell of claim 18, wherein the cell is a bacterial cell.

20. The bacterial cell of claim 19, wherein the bacterial cell is *E. coli*.

21. The bacterial cell of claim 20, which comprises a thioredoxin reductase mutation.

22. The bacterial cell of claim 21, which further comprises a glutathione reductase mutation.

23. The cell of claim 18, wherein the cell is a eukaryotic cell.

24. A host-vector system for the production of a soluble polypeptide which comprises the vector of claim 16 and a suitable host cell.

25. A method for producing a soluble polypeptide which comprises growing the host vector system of claim 24 under conditions permitting production of the

soluble polypeptide and recovering the soluble polypeptide so produced.

26. A soluble polypeptide encoded by the nucleic acid of any one of claims 1-3.

27. A soluble polypeptide which comprises an extracellular domain of a gonadotropin receptor and thioredoxin, wherein the soluble polypeptide is capable of binding to the gonadotropin.

28. A soluble polypeptide which comprises an extracellular domain of a gonadotropin receptor and a peptide segment comprising consecutive histidine residues, wherein the soluble polypeptide is capable of binding to the gonadotropin.

29. The soluble polypeptide of claim 27, wherein the polypeptide further comprises a peptide segment comprising consecutive histidine residues.

30. The soluble polypeptide of any one of claims 27-29, wherein the gonadotropin receptor is a human luteinizing hormone/chorionogonadotropin receptor and the soluble polypeptide is capable of binding to human luteinizing hormone or human chorionic gonadotropin.

31. The soluble polypeptide of any one of claims 27-29, wherein gonadotropin receptor is a human follicle stimulating hormone receptor and the soluble polypeptide is capable of binding to human follicle stimulating hormone.

32. A method of identifying an antibody capable of

binding to an extracellular domain of a gonadotropin receptor which comprises:

(a) administering the polypeptide of claim 26 to a subject and obtaining antiserum from the subject;

(b) contacting a gonadotropin receptor with the antiserum;

(c) determining whether any antibody present in the antiserum binds to the a gonadotropin receptor and isolating such antibody,

so as to thereby identify an antibody capable of binding to the extracellular domain of a gonadotropin receptor.

33. A method of obtaining a composition which comprises:

(a) identifying an antibody capable of binding to an extracellular domain of a gonadotropin receptor by the method of claim 32; and

(b) admixing the antibody so identified with a carrier.

34. A method of preventing a subject from becoming pregnant which comprises administering to the subject an amount of an antibody effective to bind to an extracellular domain of a gonadotropin receptor so as to thereby prevent the subject from becoming pregnant.

35. A method of preventing a subject from becoming pregnant which comprises administering to the subject an amount of the polypeptide of claim 26 or an extracellular domain of a gonadotropin receptor so as to thereby prevent a subject from becoming pregnant.

36. A method of terminating a pregnancy in a subject which comprises administering to the subject an amount of an antibody effective to bind to an extracellular domain of a gonadotropin receptor so as to thereby terminate the pregnancy in the subject.

37. A method of terminating a pregnancy in a subject which comprises administering to the subject an amount of the polypeptide of claim 26 or an extracellular domain of a gonadotropin receptor so as to thereby terminate the pregnancy in the subject.

38. A method of stimulating or enhancing production of an antibody capable of binding to an extracellular domain of a gonadotropin receptor in a subject which comprises administering to the subject an amount of the polypeptide of claim 26 or an extracellular domain of a gonadotropin receptor effective to stimulate or enhance antibody production in the subject.

39. A method of treating a cancer in a subject which comprises administering to the subject an amount of the polypeptide of claim 26 or an extracellular domain of a gonadotropin receptor effective to stimulate or enhance production of an antibody capable of binding to an extracellular domain of a gonadotropin receptor so as to thereby treat the cancer in the subject.

40. A method of treating a cancer in a subject which comprises administering to the subject an amount of an antibody effective to bind to an extracellular

domain of a gonadotropin receptor so as to thereby treat a cancer in the subject.

41. A. method of preventing a cancer in a subject which comprises administering to the subject an amount of the polypeptide of claim 26 or an extracellular domain of a gonadotropin receptor effective to stimulate or enhance production of an antibody capable of binding to an extracellular domain of a gonadotropin receptor so as to thereby prevent the cancer in the subject.

42. A method of preventing a cancer in a subject which comprises administering to the subject an amount of an antibody effective to bind to an extracellular domain of a gonadotropin receptor so as to thereby prevent a cancer in the subject.

43. The method of any one of claim 39-42, wherein the cancer is lung cancer, bladder cancer, prostate cancer, colorectral cancer, ovarian cancer, cervical cancer, squamous cell cancer, or breast cancer.

44. A method of decreasing a subject's production of androgen which comprises administering to the subject an amount of the polypeptide of claim 26 or an extracellular domain of a gonadotropin receptor effective to stimulate production of an antibody capable of binding to an extracellular domain of a gonadotropin receptor in the subject, so as to thereby decrease the subject's production of androgen.

45. A method of decreasing a subject's production of androgen which comprises administering to the

subject an amount of an antibody effective to bind to an extracellular domain of a gonadotropin receptor so as to thereby decrease the subject's production of androgen.

46. A method of preventing a subject from becoming afflicted with ovarian hyperstimulatory syndrome which comprises administering to the subject an amount of an antibody effective to bind to an extracellular domain of a gonadotropin receptor so as to thereby prevent the subject from becoming afflicted with ovarian hyperstimulatory syndrome.

47. A method of treating a subject afflicted with ovarian hyperstimulatory syndrome which comprises administering to the subject an amount of an antibody effective to bind to an extracellular domain of a gonadotropin receptor so as to thereby treat the subject afflicted with ovarian hyperstimulatory syndrome.

48. The method of any one of claims 34-47, wherein the gonadotropin receptor is human luteinizing hormone/choriogonadotropin receptor.

49. The method of any one of claims 34-47, wherein the gonadotropin receptor is follicle stimulating hormone receptor.